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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/555,544      | 08/01/2000  | KWANG-LEONG CHOY     | 674505-2011         | 8846             |

20999 7590 03/05/2002

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745 FIFTH AVENUE- 10TH FL.  
NEW YORK, NY 10151

EXAMINER

VINCENT, SEAN E

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1731

9

DATE MAILED: 03/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/555,544

Applicant(s)

CHOY ET AL.

Examiner

Sean E Vincent

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Specification*

1. This application does not contain an abstract of the disclosure as required by 37

CFR 1.72(b). An abstract on a separate sheet is required.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Regarding claims 1, 15, 16, 17, 27 and 28 the phrase "and/or" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

5. Claims 19-23 recite the limitation "the first outlet" or "the first and second outlets" or "the first and third outlets". There is insufficient antecedent basis for this limitation in the claims. A simple solution would be the insertion of "a first" in the third line of claim 17 before "outlet" instead of "an".

### *Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

Art Unit: 1731

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choy et al (WO 97/21848) in view of Blackwell et al (US 6312656).

9. Choy et al teaches apparatus and methods for depositing oxide or ceramic material on a substrate including delivering a stream of precursor droplets, applying an electric field between the droplet outlet and the substrate and heating the area between the outlet and the substrate to convert the droplets to deposited material (see figures, abstract, pages 1, 2, 4, 5, 7, 17 and Table 1). Choy et al does not teach generating a flame from a burner coaxial with the droplet outlet. Blackwell et al taught combustion processes and apparatus for atomized liquid reactants wherein atomization can be done electrostatically (see col. 8, lines 27-41; col. 8, line 66 to col. 10, line 7 and figure 4). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a fuel/oxygen flame as the heat source in Choy et al because Blackwell et al teaches that it was well known to do so for silica production. Likewise, It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply an electric field in the arrangement of Blackwell et al because Choy et al taught that it

Art Unit: 1731

would guide the droplets to the substrate more efficiently. Disclosure of electrostatic atomization in Blackwell et al would also have suggested the use of an electric field in the area of the burner.

10. Choy et al does not teach the claimed sequence of annual gas jets. Blackwell et al taught the use of inert shield gas between liquid precursor droplets and an outer, annular fuel gas jet. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to arrange the coaxial burner conduits and gas jets as claimed because Blackwell et al taught that it would have been helpful in properly converting liquid feedstock to silica.

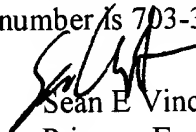
### *Conclusion*

11. The prior art made of record and not relied upon is cited to further show the state of the art.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean E Vincent whose telephone number is 703-305-3607. The examiner can normally be reached on M - F (8:30 - 6:00) Second Monday Off.

13. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 703-308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

14. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

  
Sean E Vincent  
Primary Examiner  
Art Unit 1731

S Vincent  
February 27, 2002